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June 06, 2019

Lori Stone
Cardno
1005 W. Washburn Pl
Saginaw, MI 48602

Work Order: **HS19060131**

Laboratory Results for: **Deer Park Permit Day 27**

Dear Lori,

ALS Environmental received 1 sample(s) on Jun 04, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
Dane J. Wacasey

Client: Cardno
Project: Deer Park Permit Day 27
Work Order: HS19060131

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19060131-01	WW-20190602-002-Day 27	Water		02-Jun-2019 10:00	04-Jun-2019 12:10	<input type="checkbox"/>

Client: Cardno
Project: Deer Park Permit Day 27
Work Order: HS19060131

CASE NARRATIVE

GCMS Semivolatiles by Method SW8270

Batch ID: 141615

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

Client: Cardno
Project: Deer Park Permit Day 27
Sample ID: WW-20190602-002-Day 27
Collection Date: 02-Jun-2019 10:00

ANALYTICAL REPORT

WorkOrder:HS19060131
Lab ID:HS19060131-01
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jun-2019		Analyst: GEY	
Bis(chloromethyl)ether		U	0.00020	0.00020	mg/L	1	05-Jun-2019 14:08
Surr: 2-Fluorobiphenyl	90.7			40-125	%REC	1	05-Jun-2019 14:08
Surr: 4-Terphenyl-d14	105			40-135	%REC	1	05-Jun-2019 14:08
Surr: Nitrobenzene-d5	81.8			41-120	%REC	1	05-Jun-2019 14:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

WEIGHT LOG

Client: Cardno
Project: Deer Park Permit Day 27
WorkOrder: HS19060131

Batch ID: 141615	Method: LOW-LEVEL SEMIVOLATILES BY 8270D	Prep: 3510_B_LOW
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SamplID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19060131-01	1	980	1 (mL)	0.00102

Client: Cardno
Project: Deer Park Permit Day 27
WorkOrder: HS19060131

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 141615	Test Name : LOW-LEVEL SEMIVOLATILES BY 8270D			Matrix: Water		
HS19060131-01	WW-20190602-002-Day 27	02 Jun 2019 10:00		05 Jun 2019 11:29	05 Jun 2019 14:08	1

Client: Cardno
 Project: Deer Park Permit Day 27
 WorkOrder: HS19060131

QC BATCH REPORT

Batch ID: 141615 (1)		Instrument: SV-7		Method: LOW-LEVEL SEMIVOLATILES BY 8270D					
MBLK	Sample ID: MBLK-141615	Units: ug/L		Analysis Date: 05-Jun-2019 11:49					
Client ID:	Run ID: SV-7_339867	SeqNo: 5109244		PrepDate: 05-Jun-2019		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Bis(chloromethyl)ether	U	0.20							
Surr: 2-Fluorobiphenyl	5.2	0.20	5	0	104	40 - 125			
Surr: 4-Terphenyl-d14	5.612	0.20	5	0	112	40 - 135			
Surr: Nitrobenzene-d5	4.546	0.20	5	0	90.9	41 - 120			

LCS	Sample ID: LCS1-141615	Units: ug/L		Analysis Date: 05-Jun-2019 12:49					
Client ID:	Run ID: SV-7_339867	SeqNo: 5109247		PrepDate: 05-Jun-2019		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Bis(chloromethyl)ether	3.574	0.20	5	0	71.5	40 - 140			
Surr: 2-Fluorobiphenyl	5.504	0.20	5	0	110	40 - 125			
Surr: 4-Terphenyl-d14	5.683	0.20	5	0	114	40 - 135			
Surr: Nitrobenzene-d5	5.05	0.20	5	0	101	41 - 120			

LCSD	Sample ID: LCSD1-141615	Units: ug/L		Analysis Date: 05-Jun-2019 13:08					
Client ID:	Run ID: SV-7_339867	SeqNo: 5109248		PrepDate: 05-Jun-2019		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Bis(chloromethyl)ether	3.546	0.20	5	0	70.9	40 - 140	3.574	0.775	20
Surr: 2-Fluorobiphenyl	5.679	0.20	5	0	114	40 - 125	5.504	3.13	20
Surr: 4-Terphenyl-d14	5.869	0.20	5	0	117	40 - 135	5.683	3.21	20
Surr: Nitrobenzene-d5	5.094	0.20	5	0	102	41 - 120	5.05	0.86	20

The following samples were analyzed in this batch: HS19060131-01

Client: Cardno
Project: Deer Park Permit Day 27
WorkOrder: HS19060131

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019
North Carolina	624-2019	31-Dec-2019
Maryland	343, 2018-2019	30-Jun-2019
Arkansas	19-028-0	27-Mar-2020
Texas	TX104704231-19-23	30-Apr-2020

Client: Cardno
Project: Deer Park Permit Day 27
Work Order: HS19060131

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS19060131-01	WW-20190602-002-Day 27	Login	04/06/2019 15:26:59	NDR	EXT004

Sample Receipt Checklist

Client Name: Cardno - Saginaw MI
Work Order: HS19060131

Date/Time Received: **04-Jun-2019 12:10**
Received by: **PS**

Checklist completed by: Nilesh D. Ranchod 4-Jun-2019
eSignature Date

Reviewed by: Dane J. Wacasey 6-Jun-2019
eSignature Date

Matrices: **Water**

Carrier name: **ALS Courier**

Shipping container/cooler in good condition?
Custody seals intact on shipping container/cooler?
Custody seals intact on sample bottles?
VOA/TX1005/TX1006 Solids in hermetically sealed vials?
Chain of custody present?
Chain of custody signed when relinquished and received?
Samplers name present on COC?
Chain of custody agrees with sample labels?
Samples in proper container/bottle?
Sample containers intact?
Sufficient sample volume for indicated test?
All samples received within holding time?
Container/Temp Blank temperature in compliance?
Temperature(s)/Thermometer(s):

Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	1 Page(s)
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	COC IDs:144098
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

0.8c UC/C IR11
Blue
06/04/2019 3:501pm

Water - VOA vials have zero headspace?

Yes ☐ No ☐ No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☐ No ☐ N/A ☒

pH adjusted?

Yes ☐ No ☐ N/A ☒

pH adjusted by:

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

Corrective Action:



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Fort Collins, CO
+1 970 490 1511

Holland, MI
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Chain of Custody Form

Page 1 of 1

COC ID: 144098

HS19060131

Cardno
Deer Park Permit Day 27

IV



Customer Information				ALS Project Manager:														
Purchase Order		Project Name		Project Information														
Work Order	384855	Project Name	Deer Park Permit	A	bis (chloromethyl) ether 8270 Low W													
Company Name	Cardno	Project Number		B														
Send Report To	Lori Stone	Bill To Company	ITC	C														
Address	1005. w. Washburn Pl	Invoice Attn	Accounts Payable	D														
City/State/Zip	Saginaw, MI 48602	Address	P.O. Box 698	E														
Phone		City/State/Zip	Deer Park, TX 77536	F														
Fax		Phone		G														
e-Mail Address	Lori.Stone@Cardno.com	e-Mail Address	Lori.Stone@Cardno.com	H														
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
1	ww-20190602.062-DAY 27	6-2-19	1000	W	8	2	x											
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Sampler(s) Please Print & Sign		Shipment Method	Required Turnaround Time: (Check Box)		Results Due Date:
Valerie Ph. 800 Brett Miles		Guaranteed	<input type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input checked="" type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		
Relinquished by:	Date: 6-4-19 Time: 1030	Received by:	Notes:		
Relinquished by:	Date: 6-4-19 Time: 1210	Received by (Laboratory):	Cooler ID	Cooler Temp	QC Package: (Check One Box Below)
Logged by (Laboratory):	Date:	Checked by (Laboratory):	PMU	0.8	<input type="checkbox"/> Level II Std QC <input type="checkbox"/> TRRP Checklist
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035			<input checked="" type="checkbox"/> Level III Std QC/Raw Date <input type="checkbox"/> TRRP Level IV		
			<input type="checkbox"/> Level IV SW846/CLP <input type="checkbox"/> Other		

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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